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SINTERABLE SEMI-CRYSTALLINE POWDER AND ARTICLE FORMED THEREWITH

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Abstract of **WO9606881**

A laser-sinterable powder product has been prepared having unique properties which allow the powder to be sintered in a selective laser sintering machine to form a sintered part which is near-fully dense. For most purposes, the sintered part is indistinguishable from another part having the same dimensions made by isotropically molding the powder. In addition to being freely flowable at a temperature near its softening temperature, a useful powder is disclosed that has a two-tier distribution in which substantially no primary particles have an average diameter greater than 180 mu m, provided further that the number average ratio of particles smaller than 53 mu m is greater than 80 %, the remaining larger particles being in the size range from 53 mu m to 180 mu m. A powder with slow recrystallization rates, as evidenced by non-overlapping endothermic and exothermic peaks in their differential scanning calorimetry characteristics for scan rates of on the order of 10 DEG C to 20 DEG C per minute, will also result in sintered parts that are near-fully dense, with minimal dimensional distortion.